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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/584,260	06/26/2006	Hirotsugu Kusano	293037US3X PCT	5653

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EXAMINER	
PILKINGTON, JAMES	

ART UNIT	PAPER NUMBER
3656	

NOTIFICATION DATE	DELIVERY MODE
11/12/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/584,260	KUSANO ET AL.	
	Examiner	Art Unit	
	JAMES PILKINGTON	3656	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 November 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 June 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furukoshi, USP 6,280,095, in view of Kubo, USP 5,826,681.

Furukoshi discloses a roller bearing comprising an outer ring (13), an inner ring (14), a plurality of rollers (16) placed between the two rings and an annular groove (21) having side faces (left and right of groove) formed in the outer circumference of the outer ring (13), and an o-ring (23) fitted to the annular groove (21).

Furukoshi does not disclose a first chamfered portion formed on one side face of the groove and a second chamfered portion formed on the other side face of the groove, the first and second chamfered portions being asymmetric with each other and wherein one of the first and second chamfered portions is larger than the other of the first and second chamfered portions, the larger chamfered portion being spaced from the bottom face of the groove by a distance of 1/2 or more of the thickness of the elastic o-ring.

Kubo teaches an annular groove (5) holding an o-ring (1) which includes a first chamfered portion (6) formed on one side face of the groove and a second chamfered portion (opposite 6, by reference character 2) formed on the other side face of the

groove, the first and second chamfered portions being asymmetric with each other and wherein one of the first and second chamfered portions is larger than the other of the first and second chamfered portions (see Figure 2A), the larger chamfered portion (6) being spaced from the bottom face of the groove by a distance of 1/2 or more of the thickness of the elastic o-ring (1, see Figures 2a and 2c) for the purpose of providing a space (chamfer) which allows for movement of the components without deforming (moving) the location of the sealing ring relative to the two members being sealed (C3/L53-56).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the groove in Furukoshi and provide a first chamfered portion formed on one side face of the groove and a second chamfered portion formed on the other side face of the groove, the first and second chamfered portions being asymmetric with each other and wherein one of the first and second chamfered portions is larger than the other of the first and second chamfered portions, the larger chamfered portion being spaced from the bottom face of the groove by a distance of 1/2 or more of the thickness of the elastic o-ring, as taught by Kubo, for the purpose of providing a space which allows for movement of the components without deforming the location of the sealing ring relative to the two members being sealed.

Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alten, USP 5,247,855, in view of Kubo, USP 5,826,681.

Alten discloses a motor device comprising a motor (engine), a housing (38 and additional closure structure around blades) that accommodates the motor and a roller bearing (3) fittable in a supporting portion of the housing (38), the roller bearing having an outer ring (42), an inner ring (44), a plurality of rollers (46) placed between the two rings, wherein an o-ring (48) is fitted to an annular groove (51) formed in the outer circumference of the outer ring (42), the annular groove (51) having side faces (left and right of groove) at opposite sides in the direction of the rotation axis of the motor.

Alten does not disclose a first chamfered portion formed on one side face of the groove and a second chamfered portion formed on the other side face of the groove, the first and second chamfered portions being asymmetric with each other and wherein one of the first and second chamfered portions is larger than the other of the first and second chamfered portions, the larger chamfered portion being spaced from the bottom face of the groove by a distance of 1/2 or more of the thickness of the elastic o-ring.

Kubo teaches an annular groove (5) holding an o-ring (1) which includes a first chamfered portion (6) formed on one side face of the groove and a second chamfered portion (opposite 6, by reference character 2) formed on the other side face of the groove, the first and second chamfered portions being asymmetric with each other and wherein one of the first and second chamfered portions is larger than the other of the first and second chamfered portions (see Figure 2A), the larger chamfered portion (6) being spaced from the bottom face of the groove by a distance of 1/2 or more of the thickness of the elastic o-ring (1, see Figures 2a and 2c) for the purpose of providing a

space (chamfer) which allows for movement of the components without deforming (moving) the location of the sealing ring relative to the two members being sealed (C3/L53-56).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the groove in Alten and provide a first chamfered portion formed on one side face of the groove and a second chamfered portion formed on the other side face of the groove, the first and second chamfered portions being asymmetric with each other and wherein one of the first and second chamfered portions is larger than the other of the first and second chamfered portions, the larger chamfered portion being spaced from the bottom face of the groove by a distance of 1/2 or more of the thickness of the elastic o-ring, as taught by Kubo, for the purpose of providing a space which allows for movement of the components without deforming the location of the sealing ring relative to the two members being sealed.

Claim 5 is claiming a step in the assembly process which does not alter the final structure of the apparatus. Alten in view of Kubo discloses all of the structural limitations and therefore meets the limitations of the claim 5.

Response to Arguments

Applicant's arguments filed November 2, 2009 have been fully considered but they are not persuasive.

The Applicant agrees that Kubo discloses an asymmetric shape but argues that one would not combined Kubo with Furukoshi or Alten since the Kubo relates to a rectangular ring and the O-ring in Furukoshi and Alten would not require the spacing needed by the rectangular ring.

One of ordinary skill would indeed turn to Kubo and realize that using a chamfered groove would allow for movement of the sealing ring (o-ring) relative to the outer race without damaging or pinching of the o-ring. Adding the chamfer shown in Kubo to Furukoshi or Alten would allow the devices to be assembled without having to worry about the o-ring being pinched between the housing and the outer race as it is being compressed inside the groove to create the seal. It is also noted that the fact that the ring in Kubo is rectangular in cross section does not mean it isn't an o-ring. An o-ring is defined based on the overall shape being that of an "O" but the cross section of an o–ring can be rectangular, x-shaped or v-shaped.

The Applicant argues that there is no motivation to combine since Furukoshi, Alten nor Kubo discuss the problem of an o-ring being damaged by the opening edge of the groove during insertion and that Kubo's "established function" is not found or required by Furukoshi or Alten.

It is recognized that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art.

See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Kubo provides motivation which is for the purpose of providing a space (chamfer) which allows for movement of the components without deforming (moving) the location of the sealing ring relative to the two members being sealed (C3/L53-56). Also, one of ordinary skill in the art would realize that the o-ring could indeed be damaged during insertion, or even with large vibration, and use the know groove Kubo to correct for this problem since the Kubo groove is designed to allow movement of the o-ring relative to the outer ring without damaging the o-ring. The "established function" of the chamfer in Kubo does not limit the chamfer to just one function. One of ordinary skill in the art would realize that during the assembly process the chamfer in Kubo also prevents damage to the o-ring in the same manner as being suggested above.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES PILKINGTON whose telephone number is (571)272-5052. The examiner can normally be reached on Monday - Friday 7-3.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on (571)272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JAMES PILKINGTON/
Examiner, Art Unit 3656
11/5/09

/Thomas R. Hannon/
Primary Examiner, Art Unit 3656